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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,354	08/24/2006	Kang-Ho Ahn	4684-038	2978
22429 7590 08/25/2010 LOWE HAUPTMAN HAM & BERNER, LLP 1700 DIAGONAL ROAD SUITE 300 ALEXANDRIA, VA 22314			EXAMINER MAYEKAR, KISHOR	
			ART UNIT	PAPER NUMBER
			1795	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/598,354

Applicant(s)

AHN, KANG-HO

Examiner

Kishor Mayekar

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 9, 11, 12 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-6, 8, 9, 11 , 12 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the word "means" is preceded by the word(s) "a reaction gas" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967). The same is applied to the recitations "a power supplying means" and "a collecting means". The recitations "injecting the reaction gas" and "producing a large number" need to be amended such as --for injecting the reaction gas-- and --for producing a large number--, respectively, to eliminate reference to method of operating the apparatus. The same is applied to the recitation "collecting the ultra-fine particles".

Regarding claim 2, the same is applied to claim 1 to the recitation "a sheath gas supplying means".

Regarding claim 3, the recitation "dropping a high voltage" needs to be amended such as --for dropping a high voltage --, to eliminate reference to method of operating the apparatus.

Regarding claim 4, the same is applied to claim 1 to the recitation "a delivering means".

Regarding claim 5, the same is applied to claim 1 to the recitations "a first gas supply means", "injecting the first reaction gas", "producing a large number", "a first power supply means", "a second reaction gas supply means", "injecting the second reaction gas", "producing a large number", and "a second power supply means".

Regarding claim 6, the same is applied to claim 1 to the recitations "a first gas supply means", "injecting the first reaction gas", "producing a large number", "a power supply means", "a second reaction gas supply means", and "a heating means".

Regarding claim 8, the same is applied to claim 1 to the recitations "a first gas supply means", "injecting the first reaction gas", "producing a large number", "a first power supply means", "a second reaction gas supply means", "injecting the ultra-fine", "producing a large number", "coating the first ultra-fine", "a

second power supply means", "a collecting means", and "collecting the first ultra-fine".

Regarding claim 9, the same is applied to claim 1 to the recitation "a sheath gas supplying means".

Regarding claim 11, the same is applied to claim 1 to the recitation "a delivery means".

Regarding claim 12, the same is applied to claim 1 to the recitations "a power supply means", "a reaction gas supply means", and "a collecting means".

Regarding claim 16, the same is applied to claim 1 to the recitations "a first power supply means", "a second power supply means", "a first reaction gas supply means", "a second reaction gas supply means", and "a collecting means".

Allowable Subject Matter

3. Independent claims 1, 5, 6, 8, 12 and 16 and their dependent claims 2-4, 7, 9-11, 13-15, 17 and 18 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter: Because the prior art reference do not disclose

o in an apparatus for manufacturing ultra-fine particles using corona discharge the

provision of the recited means for supplying a reaction gas and nozzle in combination

with the recited means for supplying power and means for collecting the ultra-fine

particles as claimed in claims 1-4;

o in an apparatus for manufacturing ultra-fine particles using corona discharge the

provision of the recited means for supplying a first reaction gas, first nozzle, means for

supplying a second reaction gas, second nozzle in combination with the recited means

for supplying power as claimed in claim 5;

o in an apparatus for manufacturing ultra-fine particles using corona discharge the

provision of the recited means for supplying a first reaction gas, nozzle, means for

supplying a second reaction gas, means for heating in combination with the recited

means for supplying power, duct and means for collecting as claimed in claims 6 and 7;

- o in an apparatus for manufacturing ultra-fine particles using corona discharge the

- provision of the recited means for supplying a first reaction gas, first nozzle, means for

- supplying a second reaction gas, second nozzle in combination with the recited means

- for supplying first power, first duct and collecting means as claimed in claims 8-11;

- o in a method for manufacturing ultra-fine particles using corona discharge the

- provision of the recited steps of supplying and producing in combination with the recited

- steps of generating and collecting as claimed in claims 12-15; and

- o in a method for manufacturing ultra-fine particles using corona discharge the

- provision of the recited steps of injecting, producing, mixing and injecting in combination

- with the recited steps of generating, generating and collecting as claimed in claims